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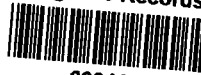
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# BARNES & THORNBURG

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November 27, 1992

Mr. David Novak  
Community Relations Coordinator  
Office of Public Affairs (PS-19J)  
U.S. EPA, Region 5  
77 West Jackson Boulevard  
Chicago, Illinois 60604

RE: RI/FS Comments, The Himco Dump Superfund Site

Dear Mr. Novak:

This office represents Himco Waste-Away Service, Inc., an Indiana Corporation. On Behalf of the corporation, we are forwarding to you comments with respect to the Remedial Investigation and Feasibility Studies prepared for the Himco Dump Superfund site, Elkhart, Indiana. These comments consist of written information which we have prepared on behalf of our client, which is found following Tab "A", and comments prepared by Mittelhauser Corporation, a consultant retained by Himco Waste-Away Service, Inc., which is found following Tab "B". These comments are being filed pursuant to the U.S. EPA's written request for comments and in response to the public meeting held in Elkhart County, Indiana, on October 6, 1992. An extension of time to file comments through November 30, 1992 was communicated to me by Mr. Thomas Nash of the U.S. EPA's office of Regional Counsel. This extension was given in response to a request made by me on the part of my client.

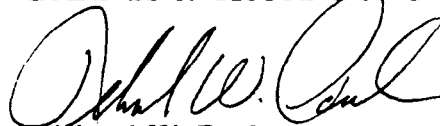
I would ask that the U.S. EPA give careful consideration to both those comments which we have prepared on behalf of the Corporation and the comments of Mittelhauser Corporation. It is the belief of my clients that a careful review of the comments and the Remedial Investigation and Feasibility Study will dictate that no action is required at the site, as it represents no current risk to either human health or the environment. The Corporation believes an appropriate response would be either that of no action or a minimal response including institutional controls and site security. This approach would be supported by both the Remedial Investigation and Feasibility Study and the comments that the U.S. EPA has received.

Mr. David Novak  
November 27, 1992  
Page 2

We have also had an opportunity to review the comments being prepared and submitted on behalf of Miles, Inc. and would like to indicate our concurrence in those comments. After you have had an opportunity to review our comments, if you have any questions, please contact me at the address and number indicated above.

Respectfully,

BARNES & THORNBURG



Richard W. Paulen

RWP/mrt

cc: Mary Elaine Gustafson  
Thomas Nash  
Himco Waste-Away Service, Inc.

RWP02998

BARNES & THORNBURG

**COMMENTS OF HIMCO WASTE-AWAY SERVICE, INC.  
SUBMITTED TO THE U.S. EPA  
NOVEMBER 30, 1992**

I. INTRODUCTION: Himco Waste-Away Service, Inc. has reviewed both the Remedial Investigation ("RI") and the Final Feasibility Study ("FS") prepared for The U.S. EPA by SEC Donohue ("Donohue"). We believe that the RI and FS clearly indicate that no present or future risk exists at the Himco Dump Superfund Site (the "Site") which would warrant an affirmative response by The U.S. EPA. The RI and FS themselves highlight the inappropriate assumptions and bad science used to arrive at the preferred remedy of a composite barrier solid waste cap, the collection of landfill gas, groundwater monitoring and institutional controls. The cost for this remedy is estimated at approximately Twelve Million (\$12,000,000.00) Dollars and represents an estimated fifteen (15) months of implementation time. This proposed expenditure of time and money has been selected after the Baseline Risk Assessment (RA) prepared by Donohue's sub-contractor indicated that there is no reason for concern from carcinogenic effects and that the estimated noncarcinogenic risk for current populations are well below a level of concern. (RI at 5-1 and 5-8). Clearly where no risk is present a remedy of this magnitude is inappropriate and the U.S. EPA should review and reevaluate its selection of the preferred remedy. Consideration should be given to delisting the Site or following a "No Action" or limited institutional controls and Site security remedy.

II. BACKGROUND: On August 17, 1988 Himco Waste-Away Service, Inc. submitted comments on the proposed inclusion of the Site on The Natural Priorities List ("NPL"). We hereby incorporate those comments by reference. Some of the background comments contained in our 1988 comments were disregarded and will again be rising here.

The Site was a municipal solid waste landfill which was operated by Chas Himes & Sons, a sole proprietorship. The landfill was started in 1960, by the sole proprietorship, in response to an expressed need by its customers. The landfill accepted solid waste from various commercial and residential customers from 1960 through the end of 1975. In 1976 the landfill continued to accepted only calcium sulfate which was used, together with stockpiled native soils, to complete a cap on the landfill. The Site was never operated by Himco Waste-Away Service, Inc., an Indiana Corporation. Himco Waste-Away Service, Inc. did not exist until December of 1968, alter which time it was the primary transportor of materials to the Site.

III. RISK EVALUATION: While the landfill leachate was originally believed to be contaminated with VOC's, SVOC's and various inorganic contaminants, sampling during the RI revealed either very limited or no groundwater contamination outside the boundaries of the landfill (FS at ES-2). During the time that the RI was being conducted, city water was extended to the private residences along the south, or hydrogeologic down gradient, side of the landfill. This action removed a major scoring

criteria from the original Hazard Ranking System ("HRS") score for the Site. If the Site were now rescored Himco Waste-Away Service, Inc is confident that the HRS score would not justify placing the Site on the NPL. This position is consistent with Donohue's determination from their field activities that "There appears to be no cause for concern for any current use of the site. All carcinogenic risk estimates are below IE-4 (one excess cancer per 10,000 persons exposed) and no hazard Indices exceed 1." (RI at ES-3) While Donohue raised concerns for possible future use of the landfill Site which would involve use of the groundwater and continued exposure to allegedly contaminated soils (see Mittelhauser comments) they did not raise any questions regarding the use of surrounding or down gradient properties, even where groundwater would be used. They were able to take this position because their extensive field work did not disclose any Site groundwater problems that were not associated with either naturally occurring substances (metals and salts) or chemicals detected in background samples which were not attributable to the landfilling operations.


Had Donohue not made their illfounded and extremely unlikely assumptions, such as the inclusion of chemicals in groundwater at one half their detection limits, even though they were not detected in site samples, or the future scenario development of residential or commercial activities on the landfill proper, there would clearly be no present or future risks related to this site and no further action of any kind would be considered. (RI volume 5, p. 3-20) The RA indicates that the composition of the natural soils in combination with the shallow water table and the fill material would make construction on the Site both difficult and costly. It is highly unlikely given the local history of the Site and its construction limitations that any future residential development would take place and, even if it did, there would be no reason to use groundwater as city water is now available at the Site. People will not be drinking the leachate. The Site is now owned by multiple parties and any commercially feasible development, even with good soils and waters, would require an agreement between these parties. If institutional controls were imposed and recorded with appropriate Elkhart City and County authorities, future development of the Site would be further precluded. Additionally, if the Site were fenced, any possible exposure to trespassers would be limited. These alternatives clearly dictate the selection of a remedy other than that offered by the U.S. EPA as its remedy of choice, a new cap over the entire landfill.

A cap over the landfill would not address any potential groundwater problems. It would alleviate only the potential risk identified for hypothetical future agricultural workers on the Site. The leachate would still be in the landfill. It does not, however, nor would it in the future, represent a threat to human health or the environment. As is demonstrated in the Mittelhauser comments, the Site geology forms a natural barrier on the bottom of the landfill. This natural barrier, when coupled with the large quantities of calcium sulfate which are present, has created a highly impermeable barrier to leachate migration. This is clearly demonstrated by the fact that no offsite contamination attributable to the landfill has been detected seventeen years after the landfill stopped accepting anything other than calcium sulfate. The addition of a composite cap over the current cap would serve no legitimate purpose and could impede naturally occurring bioremediation at the Site. Again, these facts would dictate a no action alternative or some limited institutional controls and site security.

IV. Conclusion: When these comments are reviewed in conjunction with the Mittelhauser Corporation comments, it is evident that no unacceptable risks, as established by The U.S. EPA's own criteria, exists as a result of the former Site activities. Groundwater risks have been identified but are exclusively related to either chemicals present in groundwater up gradient of the Site and in representative of background concentrations (arsenic, beryllium) or to chemicals not detected down gradient but "conservatively" estimated to be present at one-half their detection limits. (FS p.1-15) There has been no impact on groundwater outside the landfill mass and the site represents a risk to only hypothetical future residents or workers at the Site who use and consume groundwater contaminated with leachate. After its review of the RI and FS (and with this identified minimal risk) Himco Waste-Away Service, Inc. believes that the U.S. EPA should reevaluate its position on the preferred alternative and carefully consider either the no action alternative or an alternative with limited institutional controls and Site security requirements. This approach would be protective of both present and future populations and the environment. It would have minimal impact on either the community or the parties involved. Himco Waste-Away Service, Inc. strongly urges U.S. EPA to give careful consideration to these comments, and to amending its position on the preferred alternative to one of no action or the imposition of limited institutional controls Site security.

Respectfully Submitted

HIMCO WASTE-AWAY SERVICE, INC.

By:   
Richard W. Paulen, Counsel For  
Himco Waste-Away Service, Inc.

**Mittelhauser Corporation Review Comments**  
**on**  
**Himco Dump**  
**Final Remedial Investigation/Feasibility Study**  
**by SEC Donohue**  
**prepared for**  
**HIMCO Waste-Away Services, Inc.**

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Introduction

SEC Donohue under contract to Region V EPA performed both the Remedial Investigation and Feasibility Study (RI/FS) for the Himco Dump Superfund Site. SEC Donohue completed the RI in two phases from July 1989 through August 1992. The FS for the site was completed in September 1992.

Our review indicates that the RI contains fundamental flaws and misinterpretations. Enough valid data was collected to substantiate the fact that there has been no release of chemical constituents outside the landfill boundary. This is confirmed by the fact that a toxicological risk assessment performed for the site concludes that there is no cause for concern for any current uses of the site or surrounding areas.

The original Hazardous Ranking System (HRS) score for the site identified the groundwater downgradient of the site to be contaminated with both metals and volatile and semi-volatile compounds. The data developed during the RI clearly show these past data collection efforts to be in error; there is not now nor has there been in the past, any observable release of contaminants from the landfill. The HRS score was generated in reliance on this erroneous data. Therefore, it is Mittelhauser

Corporation's professional judgement that the site should be evaluated for potential delisting from the National Priorities List (NPL) of sites.

The remainder of this document will be devoted to a general review of the SEC Donohue RI and FS documents. The comments are organized into general topics of discussion undertaken in each of the individual documents.

## **Remedial Investigation**

### Hydrogeologic Characterization

An understanding of the hydrogeology at the site is fundamental to other considerations to be discussed and undertaken with respect to evaluating the site. For this reason a discussion of the site's hydrogeology will be presented prior to making more specific comments regarding other site characteristics determined and presented during the RI/FS.

As determined during the RI, groundwater saturates the coarse-grained sand and gravel which underlies the Himco Dump at an approximate elevation of between 752 feet and 756 feet mean sea level (MSL) and forms a water table aquifer. The aquifer exhibits (as determined by SEC Donohue) an average hydraulic conductivity of  $2.2 \times 10^{-2}$  cm/sec, an hydraulic gradient of 0.0016, and an average linear seepage velocity of approximately 121 ft/year. All of these values are typical for glacial outwash, sand plain aquifers in the Midwest. Groundwater flow direction is to the south-southeast.



SEC Donohue dug a series of exploratory trenches across the site to characterize the landfill waste and determine the nature and existence of the leachate within the landfill. SEC Donohue reported that the leachate elevation in the landfill is consistently 5 to 10.5 feet above the level of the water table surface at the same location. First-hand experience in excavating into the landfill by Mittelhauser Corporation and landfill experience in general indicate that general refuse landfill materials are highly permeable, at least as permeable or more permeable than the indigenous geologic materials at the site. Based on this, it is inconsistent that the leachate in the landfill would develop the elevated hydraulic head observed from the amount of recharge that SEC Donohue estimates to escape evapotranspiration and recharge the landfill leachate (4.0 to 4.6 inches/year across the landfill). Otherwise, with permeabilities similar to those attributed to the geologic materials at the site, the mounding effect would be minimal. The leachate mounding would certainly not be on the order of 5 to 10 feet above the water table.

The inconsistency can be explained by reviewing the origin of how the Himco Dump was developed. The landfill was originally developed in a natural topographic low surface depression which exhibited typical marshy conditions. These marshy conditions were formed by the surface expression of the water table exposed in this topographic low. The area, like other topographic low marshy areas on the sand plain, was likely to have been an area of local groundwater discharge during dry portions of the year. During wet seasons, the depression accepted storm water surface runoff from adjacent areas and was an area of groundwater recharge. In the process of accepting storm water runoff from adjacent areas, it is quite likely that this topographic depression was "silted in" to some extent by silts and clays carried with this surface runoff through time. This process, in effect, created a natural liner that

is composed of interbedded silt, clay, and peat (an unconsolidated deposit of semi-decomposed plant remains). Figure 1 illustrates the natural development of a post-glacial surface depression pond into a marshy bog.

The development of the landfill in the marshy surface depression, where it is now located, substantially modified the groundwater hydrology in close proximity to the landfill. Figure 2 is a typical cross-section of a landfill, developed in a topographic depression, marshy environment, a short period of time after completion. Notice that the water table is approximately in its original position (as in Figure 1). With time, however, hydrologic changes affecting the water table begin to occur. These changes result primarily in the mounding of the water table into the landfill itself due to the impermeance of vertical recharge to the aquifer by the silty clay natural liner and the increased storage of the landfill materials. Figure 3 illustrates the typical groundwater mounding effect of developing a landfill with a natural liner, on the local hydrologic environment after the hydrologic environment has reached a new equilibrium. The groundwater mounding occurs after a period of time as the landfill reaches a new field capacity caused by the greater storage of the landfill refuse.

The above depiction of the environment in which the landfill was developed is obviously idealized to some extent. The fact is, a gravel quarry pre-dated the development of the landfill at the location. However, no portion of the gravel quarry was ever filled. A cross-sectional depiction of the landfill and quarry from south to north is illustrated in Figure 4. The northern face of the landfill is indicated to generate leachate seeps in Figure 4. These leachate seeps have been observable since at least the time of the field investigation team (FIT) inspection at the site. The leachate seeps are surface expressions of the water table making contact with the

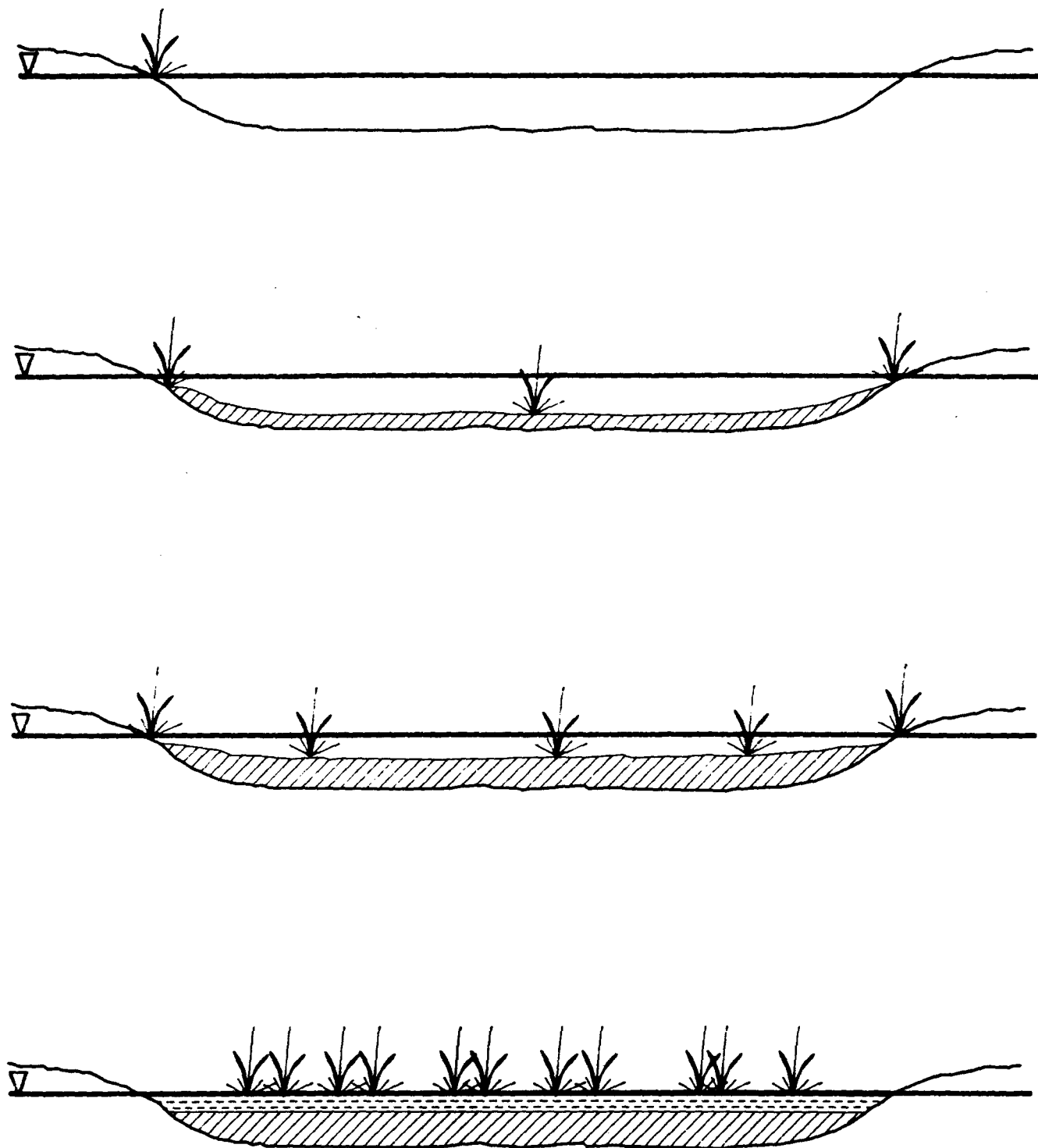


FIGURE 1

LEGEND



SILTS / CLAYS



VEGETATION



PEAT



WATER TABLE

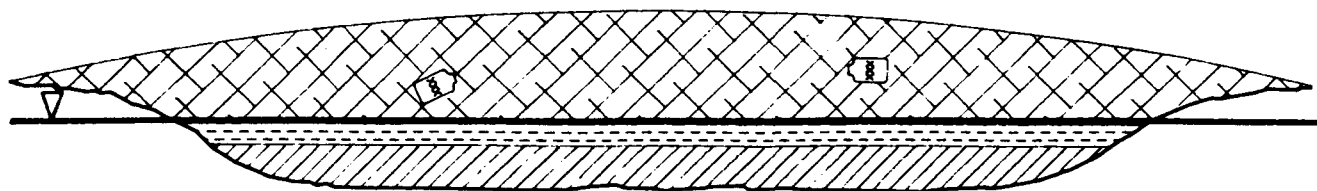


FIGURE 2

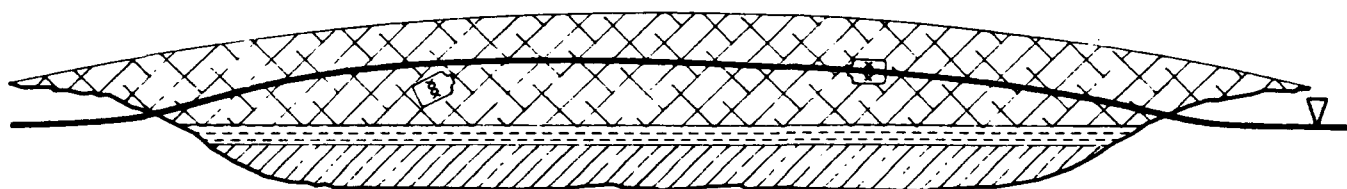


FIGURE 3

LEGEND



SILTS / CLAYS



REFUSE



PEAT



WATER TABLE

NOTE: FOR ILLUSTRATION PURPOSES ONLY, NOT TO SCALE

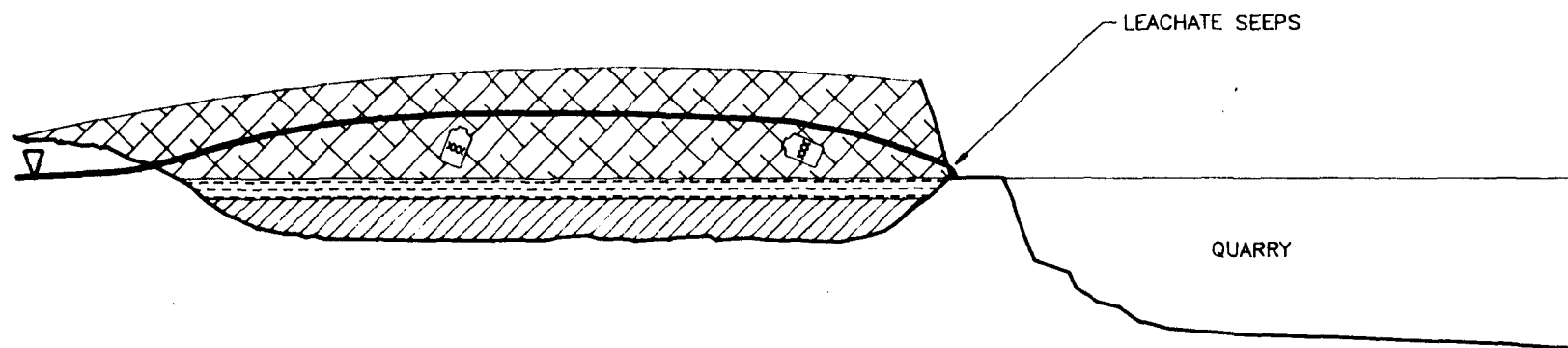
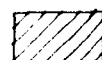


FIGURE 4

LEGEND



SILTS / CLAYS



REFUSE



PEAT



WATER TABLE

NOTE: FOR ILLUSTRATION PURPOSES ONLY. NOT TO SCALE

topographic surface, and occur on a periodic basis due to the fluctuation of the mounded leachate/water table condition in the landfill. The presence of the leachate seeps not only supports the depiction of the landfill hydrologic environment proposed here, but also indicates that the primary mechanism for leachate movement in the near vicinity of the landfill is horizontal, partly due to the probable presence of a fine grained, natural liner underlying the landfill.

It is likely that the horizontal movement of leachate in the landfill would be greater if it were not for the presence of the  $\text{CaSO}_4$  within the landfill. The SEC Donohue RI report indicates that varying amounts of  $\text{CaSO}_4$  were encountered in exploratory trenches dug into the landfill. The SEC Donohue report also indicated that the permeability of the  $\text{CaSO}_4$  is low ( $1 \times 10^{-10}$  cm/sec determined through laboratory testing; and  $8.5 \times 10^{-7}$  through arbitrary value assignment). The general manner in which the refuse was placed in the landfill involved using the  $\text{CaSO}_4$  for daily cover to create cells within the landfill. The low permeability  $\text{CaSO}_4$  used to create these cells in the landfill undoubtedly prohibits further the natural migration of precipitation infiltration into the landfill to form leachate and the subsequent migration of the leachate vertically and horizontally.

Prior to Mittelhauser Corporation performing an emergency action removal in May 1992, the landfill leachate in the vicinity of SEC Donohue test pit TL5 contained percent concentrations of organic compounds. However, groundwater monitoring results from monitoring well WT111A, approximately 225 feet directly downgradient of the landfill "hot spot," indicate no occurrence of the organic constituents. The presence of the fine-grained natural liner would explain not only the hydraulic

relationships observed in the landfill but also the lack of groundwater contamination observed in the vicinity of the landfill.

Conclusions Based on the Site Hydrogeologic Characteristics

- 1) Even though the landfill origin, hydrologic environment, and organic solute transport data indicate the presence of a natural liner below the site, the SEC Donohue investigation neglected to investigate its presence under Phase II of the RI after they had collected Phase I hydrogeologic data; repeatedly discounted the presence of any natural liner (e.g., pg. 5-1, RI); and performed risk and remediation feasibility analyses based on unabated migration in the absence of any natural liner.
- 2) SEC Donohue makes repeated reference to the site groundwater being in direct contact with landfill waste and leachate. Yet, direct site hydrologic and solute transport data contradicts this characterization. SEC Donohue failed to identify the semi-confined occurrence of groundwater under the landfill by the fine-grained natural liner.
- 3) SEC Donohue repeatedly makes statements that identify a bromide plume in groundwater originating from the landfill and suggests that more elevated concentration of bromide, determined to be present in the past (by the USGS), may have been the result of a larger release of the leachate from the landfill in the past. The conclusions drawn regarding the bromide data are unfounded. SEC Donohue's basis for concluding that the landfill is the origin of bromide in groundwater is not supported by site data development. Hydraulically

downgradient monitoring wells in the groundwater flow from the landfill do not indicate a consistent occurrence of bromide. SEC Donohue concludes in other portions of the RI document that dilution in the groundwater environment may be the reason why landfill leachate constituents are not detected in groundwater sampling downgradient of the landfill. However, SEC Donohue does not consider this dilution effect with respect to the bromide concentrations. The data in RI Table 4-21 indicates that the highest concentrations determined at the site are in downgradient monitoring wells. These levels are higher than the concentrations of bromide determined to be in the leachate of the landfill. Considering dilution by groundwater and solute transport dispersion, the conclusion regarding the bromide generation from the landfill is unfounded. Furthermore, the general conclusion that bromide is moving downward as the plume moves downgradient from the site (pg. 4-13, RI) seems equally unfounded. Vertical hydraulic gradients at the site indicate upward movement in the groundwater flow. The low concentrations of bromide determined to be present in groundwater (less than 10 mg/l) would be advectively transported with the prevailing flow of groundwater and not exhibit high density aqueous phase solute transport.

#### Baseline Risk Assessment

The baseline risk assessment report for the Himco site identified 22 inorganic and 65 organic chemicals of potential concern. The basis for identifying chemicals of concern is their occurrence in any environmental sample media. The selection process disregards the fact that a constituent may not be present in the landfill or may be present and attributable to background conditions. In situations where a constituent



was not determined to be present in the landfill, the baseline risk assessment considered the constituent to be present at one-half the detection limits concentration.

It was ultimately determined that there are no sampling data that indicate the release of any constituents from the landfill above background concentrations. As stated in the RI report, "virtually all the risk...is attributable either to chemicals present in groundwater upgradient of the site and representative of background conditions (arsenic, beryllium) or to chemicals not detected at the locations but conservatively evaluated in the risk assessment at one-half their detection limit." Therefore, the RI clearly indicates that the site would have the same carcinogenic effect whether the landfill was there or not.

The ultimate conclusion of the Baseline Risk Assessment is that "there appears to be no cause for concern for any current uses of the site. All carcinogenic risk estimates are below  $1 \times 10^{-4}$  (one excess cancer per 10,000 persons exposed) and no Hazard indices exceed 1. These estimates place risk within the acceptable range as established by the National Oil and Hazardous Substance Contingency Plan (NCP)." This conclusion would seem to dictate that no action is required at this site.

## **Feasibility Study**

### **Basis for Remedial Alternatives**

The RI data and the Baseline Risk Assessment concluded that there is no concern for any current uses of the site. The Baseline Risk Assessment further concludes that all other future land uses that do not involve use of groundwater do not appear to pose

risk at any level of concern. These estimates place risk within an acceptable range as established by the NCP.

The FS report disregarded the conclusions of the Baseline Risk Assessment and concluded that the no action and institutional controls alternatives not be considered. The no action alternative was not considered because it would not protect an individual from excess risk in the event they lived on the landfill, consumed construction debris and drilled wells and obtained groundwater contaminated with leachate below the landfill at levels which were naturally occurring in background or at imaginary levels of one-half the detection limit of laboratory analyses for compounds not actually occurring in the landfill leachate.

The institutional controls alternative was not considered "because institutional controls keep the source of contamination intact, all current and potential future risks remain intact." However, the Baseline Risk Assessment concluded that the site currently does not pose any risk and all other future land uses that do not involve use of groundwater (which could be under the control of an institutional control) do not appear to pose risk at any level. Clearly, careful consideration should be given to the no action and limited institutional controls alternative. These alternatives not only address the identified potential risks but also provide a reasonable measure of protection to human health and the environment.

The following specific comments are offered with respect to the remainder of the FS:

- 1) The site remediation approach discussion beginning on Page 1-17 characterizes the site's groundwater as follows, "the results of the human health risk

assessment indicate that the site groundwater poses unacceptable carcinogenic and noncarcinogenic risks. However, according to the risk calculations, all risks are due to the background effects or non-site-related contaminants." It goes on to mischaracterize the site by stating "because there is no liner or natural barrier to impede leachate migration to groundwater, there is a potential for the aquifer downgradient of the site to be unacceptably impacted in the future." The discussion goes on to present a groundwater monitoring program for the landfill in Appendix A.

A review of the groundwater monitoring program indicates that this remedial alternative is excessive considering the following site conditions:

- No constituent has been determined to be present in groundwater as a result of past or present landfill operations.
- No risk is posed by site-related contaminants; only background effects pose unacceptable carcinogenic and non-carcinogenic risks for groundwater.
- An upward vertical gradient exists in groundwater flow in the vicinity of the site. There are well clusters included in the groundwater monitoring plan. These well clusters are composed of two and sometimes three wells at the same location finished at different depths. There is no need for wells finished at depths greater than the upper surface of the water table. These wells would be the first wells to determine the existence and presence of any release from the landfill.

conceived and not well thought out. Aside from not having a basic understanding of the site hydrogeology, the design of this leachate collection system exhibits a lack of even a rudimentary understanding of basic hydrogeologic principles.

The basis for the design is provided in the FS Technical Memorandum A3. In this memo a series of erroneous assumptions are made that result in a flawed design that significantly overestimates the number of leachate collection wells and cost for the system. The design calculations essentially utilize an empirical equation that calculates the *radius of influence of a pumping well*. The source of the equation is identified as a foundation engineering text. The equation could have been substituted for a more direct analytical calculation; however, this is the least of the problems. There is no consideration of the water budget with respect to the landfill leachate level, the superposition principle for water well hydraulics with respect to the calculation, the water budget for the landfill or what is even being calculated by the radius of influence calculation and how it relates to developing a leachate collection system.

The design assumes that the landfill will be de-watered (of leachate) by pumping a grid of 680 leachate collection wells installed over the surface of the landfill to a depth 2 feet above the site's natural groundwater table. However, the calculation assumes a laterally continuous aquifer of infinite lateral extent. This is not the case with the leachate in the landfill. By SEC Donohue's estimates, the leachate in the landfill is only recharged by precipitation infiltration at a rate of approximately 4.6 inches/year. Therefore, the wells would pump for a very short period of time and would de-water the landfill of

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The cost associated with the leachate collection system design, \$2,000, is probably more than an order of magnitude greater than what would be for a well engineered peripheral, drainage tile collection system.

- 4) Uncertainty Analysis presented in Section 4.5 of the FS highlights the following points regarding the RI and data acquisition efforts:

- Many of the polyaromatic hydrocarbon (PAH) constituents determined to be present in the south portion of the landfill were also present in background samples taken at the site. Many of the PAH compounds are present in peat (an unconsolidated deposit of semicarbonized plant remains). The landfill was developed in a former swamp, and the entire area in and around the landfill has undergone extensive movement of soils. The probability is high that several of the PAH compounds determined to be present in site samples being attributable to the former peat deposits at the site.

It is interesting that the PAH constituents determined to be present in the south portion of the landfill were described as being from the "construction debris area." Many of the PAH compounds determined to be present are coal tar derivatives that are commonly found in asphalt. Asphalt is a common construction debris component. There were no coal tar wastes disposed in the landfill, and there are no manufacturing facilities in or around the Elkhart area that would have disposed of these PAH type coal tar wastes in the landfill as off-spec feedstock. During

emergency removal action, Mittelhauser observed asphalt in the landfill debris that was uncovered. Therefore, the nature of the construction debris waste at the south portion of the landfill should be inspected to determine if it is asphaltic in origin before further sampling is performed in the area, or any determination is made regarding the necessity of a specific remedy or response.

- The leachate generation rate in the landfill and its impact on groundwater are considered in the Uncertainty Analysis. SEC Donohue should have considered the leachate generation and hydrogeologic environment of the landfill to much greater extent. If SEC Donohue used a more analytical approach to assess the hydrogeology of the site (e.g., groundwater flow modeling), a more realistic picture of the site would be developed. This new site model would significantly affect the alternatives considered for the site. As we have previously indicated, the landfill would not require remedial action since there is no observable release of contamination to groundwater.

### Risk Assessment

- 1) A summary of the human health evaluation is provided in the Executive Summary of the FS. It is concluded that "there appears to be no cause of concern for any current uses of the site." Additionally, no current or future threat exists for areas or populations surrounding the site. The human health

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evaluation goes on to say that there is cause for concern for future uses of the site that involve use of groundwater. This concern is for homes built on the landfill and use of groundwater beneath the landfill. The chemicals contributing to this concern include arsenic, beryllium, cadmium, chromium, vanadium, alpha-chlordane, PAHs, and vinyl chloride. However, most of these chemicals are not real threats caused by the landfill. The metals are present in background samples or are once again estimated at one-half their detection limit if not present in the leachate. The PAHs are present in background samples and/or associated with the site "construction debris" which may simply be composed of asphaltic wastes or peat. Yet, if a resident lived in the "construction debris" area and eats "x" amount of this debris daily, then they would attain an unacceptable calculated cancer risk.

The human health evaluation Executive Summary concluded with the statement, "All other future land uses that do not involve use of groundwater do not appear to pose risk at a level of concern." Given this statement, it seems reasonable that the only action that should take place at the site should be that of institutional controls that restrict access to the site so people cannot eat the construction debris or drill, install wells, and drink the groundwater below the site which could potentially be contaminated by the landfill leachate at imaginary levels of one-half the detection limit.

The Risk Summary on the bottom of Page 1-14 of the FS further supports the opinions and comments above.

- 2) The No Action alternative in Section 2.5.1 of the FS is dismissed because of the unacceptable risk associated with an individual living on the landfill as described in #1, above. It is unclear how these risks could be decreased by any other measure other than institutional controls. A landfill cap and a leachate collection system would result in the same risk.
  
- 3) The Institutional Controls discussion in Section 2.5.2 contradicts the logic presented throughout the entirety of the RI/FS with respect to risk assessment. The first sentence of the second paragraph states, "Because institutional controls keep the source of contamination intact, all current and potential future risks remain intact." However, if people are prohibited from living on the landfill, eating the construction debris waste, and drilling and installing wells directly below the landfill into groundwater that could be potentially contaminated by landfill leachate at one-half the detection limit for the various metals of concern, then there would not be any unacceptable risk posed by the site.

It is clear that institutional controls that prohibit people from living on and having access to the landfill would reduce any risk associated with the landfill to acceptable levels.

- 4) The last sentence on Page 4-18 discussing the Overall Protection of Human Health and the Environment states, "As such, although conceptually Alternatives 2, 3, and 4 will provide a significant improvement over the current



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(No Action) condition, this improvement cannot be based on risk factors." There is a very simple improvement in risk cannot be quantified; that is, there is risk realized by implementing these alternatives over institutional controls that prohibit access to the site. and 4, people living on the landfill could still do all the things on landfills typically do (i.e., consuming construction debris, under the landfill to acquire groundwater that could be by the leachate from the landfill by constituents at limit).

- 5) Section 4.5.3 Risk Calculation should have been Summary. It would have allowed all readers to understand estimates are overestimates of the true risk involved with hard to believe that many of the risk calculations standardized techniques for example, the methodology through evaluation of non-existent compounds at one half of their analyses detection limits.

Conclusion

The original HRS score for the site identified the groundwater downgradient of the site to be contaminated with both metals and volatile and semi-volatile compounds. The data developed during the RI clearly show these past data collection efforts to be in

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error; there is not now nor has there been in the past any observable release of contaminants from the landfill. The HRS score was generated in reliance on this erroneous data. Furthermore, the Baseline Risk Assessment for the site has concluded that "there appears to be no cause for concern for all current uses of the site. All carcinogenic risk estimates are below  $1 \times 10^{-4}$  and the Hazardous Indices exceed 1. These estimates place risks within an acceptable range as established by the NCP. Therefore, in Mittelhauser Corporation's professional judgement, the site should be evaluated for potential delisting from the National Priority List of sites, or the no action alternative with institutional controls should be considered as the alternative of choice.